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COURSE: Hydrologic and Hydraulic Risk

TEACHER: Aurelia Sole (3 CFU) Mariarosaria Margiotta (3 CFU)

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website:

Language Italian or English if are present foreign students

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ECTS: 6

n. of hours: 48

Academic year: 2014/15

Campus: Potenza

Semester: II

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#### TOPICS

Risk: hazard and vulnerability, the laws on soil defense and civil protection.

The course aims to provide students with a real case study, analyzing the various aspects of hydrology and hydraulics, and working towards a solution of the problem.

In particular, so far were analyzed following case studies:

Design alternatives to the implementation of the Dam Valda for the defense of the city of Trento from the risk of flooding

Risk of flooding in urban area - Torrente Gallitello

Vajont October 9, 1963: Assessment of areas at risk of flooding resulting from a dam break event and comparison with the disaster of October 9, 1963 - Evaluation of the potential energy of the water scheme-Boite-Piave Maè-Vajont.

At the end of the course October 9, 2007 was made a seminar entitled "The Scream Vajont", with presentation of the work carried out during the course

Stava1985: assessment of the areas at risk of flooding following the collapse of the basins of Prestavel: assessment of the areas at risk of flooding and comparison with the data of the disaster - hydrological assessments on the entire river basin.

Versilia, 1996: hydrological study and evaluation of the areas at risk of flooding resulting from the rain event of 19 June 1996 on the Apuan Alps.

Hydraulic assessments of drainage canals in the coastal area of Metaponto

The following technical visits have been carried out:

Sarno scene of the catastrophe of May 5 1998, implementation of the works of defense.

Vajont places of the catastrophe (Erto, Casso, Blyth, Dams and control works), a system of dams, hydric schema: Boite-Piave Maè, documentation of the event at the Museum of Longarone, meeting with the writer Mauro Corona.

Stava1985: location of the disaster, visit to the museum Stava Foundation, documents of the tragic event, visit to the mines of Ridanna

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#### TEACHING METHODS (please tick one or more options)

Theoretical lessons

Tutorials in classroom

Tutorials in laboratory

Project works

Technical visits

Other activities (please specify) \_\_\_\_\_

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#### TEXTBOOKS

Educational material provided ad hoc

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#### ON-LINE EDUCATIONAL MATERIAL

web address: The teacher creates A shared folder from which students download the materials on-line

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#### LEARNING OUTCOMES

Ability to deal with a problem related to risk hydrological-hydraulic models and propose solutions by adopting proper design choices

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#### REQUIREMENTS

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#### EVALUATION METHODS (please tick one or more options)

Intermediate verifications

Written examination

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Discussion of a project work

Practical test

Oral examination

Other methods (please specify) \_\_\_\_\_

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#### DETAILED CONTENT

As mentioned the program of the course is specified from year to year, depending on the topic being treated. The scope is always constituted by the risk hydrologic-hydraulic. During the course are provided in-depth lessons on the use of hydrological and hydraulic models, one and two-dimensional, useful to address the problem proposed, existing legislation in the field of flood risk, the assessment of hazard, vulnerability and damage.

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SEMINARS BY EXTERNAL EXPERTS    YES     NO

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FURTHER INFORMATION

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